Learn about Polychlorinated Biphenyls

On this page:

What Are PCBs?

PCBs are a group of man-made organic chemicals consisting of carbon, hydrogen and chlorine atoms. The number of chlorine atoms and their location in a PCB molecule determine many of its physical and chemical properties. PCBs have no known taste or smell, and range in consistency from an oil to a waxy solid.

PCBs belong to a broad family of man-made organic chemicals known as chlorinated hydrocarbons. PCBs were domestically manufactured from 1929 until manufacturing was banned in 1979. They have a range of toxicity and vary in consistency from thin, light-colored liquids to yellow or black waxy solids. Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including:

- Electrical, heat transfer and hydraulic equipment
- Plasticizers in paints, plastics and rubber products
- Pigments, dyes and carbonless copy paper
- Other industrial applications

Inadvertent PCBs

In the United States, PCBs were commercially manufactured from 1929 until production was banned in 1979 by the Toxic Substances Control Act (TSCA). However, EPA's regulations implementing TSCA for PCBs allow some inadvertent generation of PCBs to occur in excluded manufacturing processes, as defined in title 40 of the Code of Federal Regulations (CFR) section 761.3.

Specifically, the PCB regulations allow inadvertently generated PCBs (iPCBs) at defined concentrations, under certain conditions, and with requirements to report to EPA and maintain certain records. Learn more about iPCBs <https://epa.gov/pcbs/inadvertent-pcbs>, including the regulatory context, EPA enforcement, iPCBs in the environment, ongoing research conducted by the EPA, and pollution prevention efforts.

Commercial Uses for PCBs

Although no longer commercially produced in the United States, PCBs may be present in products and materials produced before the 1979 PCB ban. Products that may contain PCBs include:

- Transformers and capacitors
- Electrical equipment including voltage regulators, switches, re-closers, bushings, and electromagnets
- Oil used in motors and hydraulic systems
- Old electrical devices or appliances containing PCB capacitors
- Fluorescent light ballasts <https://epa.gov/pcbs/disposal-fluorescent-light-ballasts-flb>
- Cable insulation
- Thermal insulation material including fiberglass, felt, foam, and cork
- Adhesives and tapes
- Oil-based paint
- Caulking <https://epa.gov/pcbs/study-plans-related-polychlorinated-biphenyls-pcbs-schools>
- Plastics
- Carbonless copy paper
- Floor finish

The PCBs used in these products were chemical mixtures made up of a variety of individual chlorinated biphenyl components known as congeners. Most commercial PCB mixtures are known in the United States by their industrial trade names, the most common being Arochlor.

Release and Exposure of PCBs

Today, PCBs can still be released into the environment from:

- Poorly maintained hazardous waste sites that contain PCBs
- Illegal or improper dumping of PCB wastes
- Leaks or releases from electrical transformers containing PCBs
- Disposal of PCB-containing consumer products into municipal or other landfills not designed to handle hazardous waste
- Burning some wastes in municipal and industrial incinerators

PCBs do not readily break down once in the environment. They can remain for long periods cycling between air, water and soil. PCBs can be carried long distances and have been found in snow and sea water in areas far from where they were released into the environment. As a consequence, they are found all over the world. In general, the lighter the form of PCB, the further it can be transported from the source of contamination.

PCBs can accumulate in the leaves and above-ground parts of plants and food crops. They are also taken up into the bodies of small organisms and fish. As a result, people who ingest fish may be exposed to PCBs that have bioaccumulated in the fish they are ingesting.

The National Center for Health Statistics, a division of the Centers for Disease Control and Prevention, conducts the National Health and Nutrition Examination Surveys (NHANES). NHANES is a series of U.S. national surveys on the health and nutrition status of the noninstitutionalized civilian population, which includes data collection on selected chemicals. Interviews and physical examinations

are conducted with approximately 10,000 people in each two-year survey cycle. PCBs are one of the chemicals where data are available from the NHANES surveys <https://epa.gov/americaschildrenenvironment/ace-biomonitoring>.

PCB Congeners

A PCB congener is any single, unique well-defined chemical compound in the PCB category. The name of a congener specifies the total number of chlorine substituents, and the position of each chlorine. For example: 4,4'-Dichlorobiphenyl is a congener comprising the biphenyl structure with two chlorine substituents - one on each of the #4 carbons of the two rings. In 1980, a numbering system was developed which assigned a sequential number to each of the 209 PCB congeners.

- Table of PCB Congeners <https://epa.gov/pcbs/table-polychlorinated-biphenyl-pcb-congeners>

PCB Homologs

Homologs are subcategories of PCB congeners that have equal numbers of chlorine substituents. For example, the tetrachlorobiphenyls are all PCB congeners with exactly 4 chlorine substituents that can be in any arrangement.

- Table of PCB Homologs <https://epa.gov/pcbs/table-polychlorinated-biphenyl-pcb-homologs>

PCB Mixtures and Trade Names

With few exceptions, PCBs were manufactured as a mixture of individual PCB congeners. These mixtures were created by adding progressively more chlorine to batches of biphenyl until a certain target percentage of chlorine by weight was achieved. Commercial mixtures with higher percentages of chlorine contained higher proportions of the more heavily chlorinated congeners, but all congeners could be expected to be present at some level in all mixtures. While PCBs were manufactured and sold under many names, the most common was the Aroclor series.

- Individual PCB Congeners <https://epa.gov/pcbs/table-polychlorinated-biphenyl-pcb-congeners>

Aroclor

Aroclor is a PCB mixture produced from approximately 1930 to 1979. It is one of the most commonly known trade names for PCB mixtures. There are many types of Aroclors and each has a distinguishing suffix number that indicates the degree of chlorination. The numbering standard for the different Aroclors is as follows:

- The first two digits usually refer to the number of carbon atoms in the phenyl rings (for PCBs this is 12)
- The second two numbers indicate the percentage of chlorine by mass in the mixture. For example, the name Aroclor 1254 means that the mixture contains approximately 54% chlorine by weight.
- Table of Aroclors <https://epa.gov/pcbs/table-aroclors>

PCB Trade Names

PCBs were manufactured and sold under many different names. The names in the following table have been used to refer to PCBs or to products containing PCBs. Please note:

- Some of these names may be used for substances or mixtures not containing PCBs.
- Many of these names were used with distinguishing suffixes, indicating degree of chlorination, type of formulation, or other properties (e.g., Aroclor 1254; Clophen A60).
- Some of these names may be misspellings of the correct names, but are included here for completeness.

	PCB Trade Names	
Aceclor	Diaclor	PCB
Adkarel	Dicolor	PCB's
ALC	Diconal	PCBs
Apirolio	Diphenyl, chlorinated	Pheaoclor
Apirorlio	DK	Phenochlor
Arochlor	Duconal	Phenoclor
Arochlors	Dykanol	Plastivar
Aroclor	Educarel	Polychlorinated biphenyl
Aroclors	EEC-18	Polychlorinated biphenyls
Arubren	Elaol	Polychlorinated diphenyl
Asbestol	Electrophenyl	Polychlorinated diphenyls
ASK	Elemex	Polychlorobiphenyl
Askael	Elinol	Polychlorodiphenyl
Askarel	Eucarel	Prodelec
Auxol	Fenchlor	Pydrau
Bakola	Fenclor	Pyraclor
Biphenyl, chlorinated	Fenocloro	Pyralene
Chlophen	Gilotherm	Pyranol
Chloretol	Hydol	Pyroclor
Chlorextol	Hyrol	Pyronol
Chlorinated biphenyl	Hyvol	Saf-T-Kuhl
Chlorinated diphenyl	Inclor	Saf-T-Kohl
Chlorinol	Inerteen	Santosol
Chlorobiphenyl	Inertenn	Santotherm
Chlorodiphenyl	Kanechlor	Santothern
Chlorphen	Kaneclor	Santovac
Chorextol	Kennechlor	Solvol
Chorinol	Kenneclor	Sorol
Clophen	Leromoll	Soval
Clophenharz	Magvar	Sovol

	PCB Trade Names	
Cloresil	MCS 1489	Sovtol
Clorinal	Montar	Terphenychlore
Clorphen	Nepolin	Therminal
Decachlorodiphenyl	No-Flamol	Therminol
Delor	NoFlamol	Turbinol
Delorene	Non-Flamol	
	Olex-sf-d	
	Orophene	

Health Effects of PCBs

PCBs have been demonstrated to cause a variety of adverse health effects. They have been shown to cause cancer in animals as well as a number of serious non-cancer health effects in animals, including: effects on the immune system, reproductive system, nervous system, endocrine system and other health effects. Studies in humans support evidence for potential carcinogenic and non-carcinogenic effects of PCBs. The different health effects of PCBs may be interrelated. Alterations in one system may have significant implications for the other systems of the body. The potential health effects of PCB exposure are discussed in greater detail below.

- Cancer
- Non-Cancer Effects
- Immune Effects
- Reproductive Effects
- Neurological Effects
- Endocrine Effects
- Other Non-cancer Effects
- Integrated Risk Information System (IRIS)

Cancer

PCBs are one of the most widely studied environmental contaminants. Many studies in animals and human populations have been performed to assess the potential carcinogenicity of PCBs. EPA's first assessment of PCB carcinogenicity was completed in 1987. At that time, data was limited to Aroclor 1260. In 1996, at the direction of Congress, EPA completed a reassessment of PCB carcinogenicity titled "PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures". <https://epa.gov/pcbs/cancer-dose-response-assessment-polychlorinated-biphenyls-pcbs-and-application-environmental> EPA's cancer reassessment reflected the Agency's commitment to the use of the best science in evaluating health effects of PCBs. The reassessment was peer reviewed by 15 experts on PCBs, including scientists from government, academia and industry. The peer reviewers agreed with EPA's conclusion that PCBs are probable human carcinogens.

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The cancer reassessment determined that PCBs are probable human carcinogens, based on the following information:

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EPA reviewed all of the available literature on the carcinogenicity of PCBs in animals as an important first step in the cancer reassessment, which presented clear evidence that PCBs causes cancer in animals. An industry scientist commented that "all significant studies have been reviewed and are fairly represented in the document". An industry-sponsored peer-reviewed rat study, characterized as the "gold standard study" by one peer reviewer, demonstrated that every commercial PCB mixture tested caused cancer. The new studies reviewed in the PCB reassessment allowed EPA to develop more accurate potency estimates than previously available for PCBs. The reassessment provided EPA with sufficient information to develop a range of potency estimates for different PCB mixtures, based on the incidence of liver cancer and in consideration of the mobility of PCBs in the environment

The reassessment resulted in a slightly decreased cancer potency estimate for Aroclor 1260 relative to the 1987 estimate due to the use of additional dose-response information for PCB mixtures and refinements in risk assessment techniques (e.g., use of a different animal-to-human scaling factor for dose). The reassessment concluded that the types of PCBs likely to be bioaccumulated in fish and bound to sediments are the most carcinogenic PCB mixtures.

In addition to the animal studies, a number of epidemiological studies of workers exposed to PCBs have been performed. Results of human studies raise concerns for the potential carcinogenicity of PCBs. Studies of PCB workers found increases in rare liver cancers and malignant melanoma. The presence of cancer in the same target organ (liver) following exposures to PCBs both in animals and in humans and the finding of liver cancers and malignant melanomas across multiple human studies adds weight to the conclusion that PCBs are probable human carcinogens.

Some of the studies in humans have not demonstrated an association between exposures to PCBs and disease. However, epidemiological studies share common methodological limitations that can affect their ability to discern important health effects (or define them as statistically significant) even when they are present. Often, the number of individuals in a study is too small for an effect to be revealed, or there are difficulties in determining actual exposure levels, or there are multiple confounding factors (factors that tend to co-occur with PCB exposure, including smoking, drinking of alcohol, and exposure to other chemicals in the workplace). Epidemiological studies may not be able to detect small increases in cancer over background unless the cancer rate following contaminant exposure is very high or the exposure produces a very unusual type of cancer. However, studies that do not demonstrate an association between exposure to PCBs and disease should not be characterized as negative studies. These studies are most appropriately viewed as inconclusive. Limited studies that produce inconclusive findings for cancer in humans do not mean that PCBs are safe.

It is very important to note that the composition of PCB mixtures changes following their release into the environment. The types of PCBs that tend to bioaccumulate in fish and other animals and bind to sediments happen to be the most carcinogenic components of PCB mixtures. As a result, people who ingest PCB-contaminated fish or other animal products and contact PCB-contaminated sediment may be exposed to PCB mixtures that are even more toxic than the PCB mixtures contacted by workers and released into the environment.

EPA's peer reviewed cancer reassessment concluded that PCBs are probable human carcinogens. EPA is not alone in its conclusions regarding PCBs. The International Agency for Research on Cancer has declared PCBs to be probably carcinogenic to humans. The National Toxicology Program has stated that it is reasonable to conclude that PCBs are carcinogenic in humans. The National Institute for Occupational Safety and Health has determined that PCBs are a potential occupational carcinogen.

Non-Cancer Effects

EPA evaluates all of the available data in determining the potential noncarcinogenic toxicity of environmental contaminants, including PCBs. Based on extensive studies conducted using environmentally relevant doses, EPA found clear evidence that PCBs have significant toxic effects in animals, including non-human primates. PCBs can affect an animal’s immune system, reproductive system, nervous system and endocrine system. The body's regulation of all of these systems is complex and interrelated. As a result, it is not surprising that PCBs can exert a multitude of serious adverse health effects.

Immune Effects

The immune system is critical for fighting infections, and diseases of the immune system have very serious potential implications for the health of humans and animals. The immune effects of PCB exposure have been studied in Rhesus monkeys and other animals. It is important to note that the immune systems of Rhesus monkeys and humans are very similar. Studies in monkeys and other animals have revealed a number of serious effects on the immune system following exposures to PCBs:

- Significant decrease in size of the thymus gland, which is critical to the immune system in infant monkeys
- Reductions in the response of the immune system following a challenge with sheep red blood cells. This is a standard laboratory test that determines the ability of an animal to mount a primary antibody response and develop protective immunity
- Decreased resistance to Epstein-Barr virus and other infections in PCB-exposed animals

Individuals with diseases of the immune system may be more susceptible to pneumonia and viral infections. The animal studies were not able to identify a level of PCB exposure that did not cause effects on the immune system.

Did you know?

Epstein-Barr Virus (EBV) <http://www.cdc.gov/epstein-barr/about-ebv.html>, also known as human herpesvirus 4, is a member of the herpes virus family. It is one of the most common human viruses and is found all over the world. EBV spreads most commonly through bodily fluids, primarily saliva.

(Source: Centers for Disease Control) <http://www.cdc.gov/epstein-barr/about-ebv.html>

In humans, a recent study found that individuals infected with Epstein-Barr virus had a greater association of increased exposures to PCBs. It also increased the risk of non-Hodgkin's lymphoma more than for those who had no Epstein-Barr infection. This finding is consistent with increases in infection with Epstein Barr virus in animals exposed to PCBs.

Since PCBs suppress the immune system and immune system suppression has been demonstrated as a risk factor for non-Hodgkin's lymphoma, suppression of the immune system is a possible mechanism for PCB-induced cancer. Immune effects were also noted in humans who experienced exposure to rice oil contaminated with PCBs, dibenzofurans and dioxins.

Taken together, the studies in animals and humans suggest that PCBs may have serious potential effects on the immune systems of exposed individuals.

Reproductive Effects

Reproductive effects of PCBs have been studied in a variety of animal species, including Rhesus monkeys, rats, mice and mink. Rhesus monkeys are generally regarded as the best laboratory species for predicting adverse reproductive effects in humans. Potentially serious effects on the reproductive system were seen in monkeys and a number of other animal species following exposures to PCB mixtures. Most significantly, PCB exposures were found to reduce the birth weight, conception rates and live birth rates of monkeys and other species; and PCB exposure reduced sperm counts in rats. Effects in monkeys were long lasting and were observed long after the dosing with PCBs occurred.

Studies of reproductive effects have also been carried out in human populations exposed to PCBs. Children born to women who worked with PCBs in factories showed decreased birth weight and a significant decrease in gestational age with increasing exposures to PCBs. Studies in fishing populations believed to have high exposures to PCBs also suggest similar decreases. This same effect was seen in multiple species of animals exposed to PCBs, and suggests that reproductive effects may be important in humans following exposures to PCBs.

Neurological Effects

Proper development of the nervous system is critical for early learning and can have potentially significant implications for the health of individuals throughout their lives. Effects of PCBs on nervous system development have been studied in monkeys and a variety of other animal species. Newborn monkeys exposed to PCBs showed persistent and significant deficits in neurological development, including visual recognition, short-term memory and learning. Some of these studies were conducted using the types of PCBs most commonly found in human breast milk.

Studies in humans have suggested effects similar to those observed in monkeys exposed to PCBs, including learning deficits and changes in activity associated with exposures to PCBs. The similarity in effects observed in humans and animals provide additional support for the potential neurobehavioral effects of PCBs.

Endocrine Effects

There has been significant discussion and research on the effects of environmental contaminants on the endocrine system ("endocrine disruption"). While the significance of endocrine disruption as a widespread issue in humans and animals is a subject of ongoing study, PCBs have been demonstrated to exert effects on thyroid hormone levels in animals and humans. Thyroid hormone levels are critical for normal growth and development, and alterations in thyroid hormone levels may have significant implications.

It has been shown that PCBs decrease thyroid hormone levels in rodents. Research has also shown that these decreases result in developmental deficits in rodents, including deficits in hearing. PCB exposures have been associated with changes in thyroid hormone levels in infants in studies conducted in the Netherlands and Japan. Additional research will be required to determine the significance of these effects in the human population.

Other Non-cancer Effects

A variety of other non-cancer effects of PCBs have been reported, including the following:

- Dermal and ocular effects in monkeys and humans
- Liver toxicity in rodents
- Elevated blood pressure, serum triglyceride and serum cholesterol in humans

Integrated Risk Information System (IRIS)

EPA's Integrated Risk Information System (IRIS) Program <https://epa.gov/iris> identifies and characterizes the health hazards of chemicals found in the environment via individual assessments. Each IRIS assessment can cover a chemical, a group of related chemicals, or a complex mixture. The IRIS Program is located within EPA's National Center for Environmental Assessment (NCEA) in the Office of Research and Development (ORD). PCBs are a chemical where IRIS has completed a primary assessment and additional assessment work is ongoing.

Laws and Regulations

Statute: Toxic Substances Control Act (TSCA)

The Toxic Substances Control Act of 1976 provides EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures, including PCBs. Some substances are generally excluded from TSCA, including but not limited to, food, drugs, cosmetics and pesticides. TSCA addresses the production, importation, use and disposal of specific chemicals including polychlorinated biphenyls (PCBs), asbestos, radon and lead-based paint. For more information see EPAs Summary of the Toxic Substance Control Act <https://epa.gov/laws-regulations/summary-toxic-substances-control-act> page.

PCB Regulations: Part 761 in Title 40 of the Code of Federal Regulations

Current PCB regulations, published pursuant to the TSCA statute, can be found in Title 40 of the Code of Federal Regulations (CFR) in Part 761. The Government Printing Office maintains the most current version of the CFR. View PCB regulations in the electronic-CFR. For useful interpretation of the regulations as well as answers to frequently asked questions please visit EPA's Policy and Guidance for PCBs page <https://epa.gov/pcbs/policy-and-guidance-polychlorinated-biphenyl-pcbs>.

Additional Information

In addition, the Government Printing Office maintains a searchable database of all CFR publications and Federal Register (FR) Notices.

- Code of Federal Regulations
- Federal Register Notices <https://www.federalregister.gov/> (FR Notices)

Detailed List of PCB Federal Register Notices (As of September 6, 2012)

EPA publishes information about the PCB program through the Federal Register. The Federal Register Notices listed below include PCB-related rules (proposed and final), notices of public meetings, responses to official comments, etc. This is not a comprehensive list of current regulations. A searchable listing of EPA's Register Notices can be found on the Federal Digital System web page <https://www.federalregister.gov/>.

View the List of Federal Register Notices that Pertain to PCBs

Date	Type	Title	Citation
7/2/2015	Technical Amendment	Revisions to PCB Manifesting Regulations (Technical Correction)	80 FR 37994 <https://www.federalregister.gov/documents/2015/07/02/2016395/polychlorinated-biphenyls-pcbs-revisions-to-manifesting-regulations-item-number>
9/29/2014	Final Rule	Polychlorinated Biphenyls: Manufacturing (Import) Exemption	79 FR 58266 <https://www.federalregister.gov/documents/2014/09/29/2023104/polychlorinated-biphenyls-pcbs-manufacturing-impo exemption-for-the-defense-logistics-agency-dla>
9/6/2012	Direct Final Rule	Revisions to Manifesting Regulations	77 FR 54818 <https://www.federalregister.gov/documents/2012/09/06/2021674/polychlorinated-biphenyls-pcbs-revisions-to-manifesting-regulations>
6/16/2010	Advance Notice of Proposed Rulemaking (ANPRM)	Polychlorinated Biphenyls (PCBs); Reassessment of Use Authorizations; Extension of Comment Period and Additional Public Meetings	75 FR 34076 <https://www.federalregister.gov/documents/2010/06/16/2014522/polychlorinated-biphenyls-pcbs-reassessment-of-use authorizations-extension-of-comment-period-and>
4/7/2010	Advance Notice of Proposed Rulemaking (ANPRM)	Polychlorinated Biphenyls (PCBs); Reassessment of PCB Use Authorizations	75 FR 17645 <https://www.federalregister.gov/documents/2010/04/07/207751/polychlorinated-biphenyls-pcbs-reassessment-of-use-authorizations>
1/29/2010	Withdrawal of Proposed Rule	EPA Withdraws Proposed Rule for an Import Exemption for Veolia ES Technical Solutions, L.L.C. <https://www.federalregister.gov/documents/2008/04/21/e8-8560/polychlorinated-biphenyls-manufacturing-import-exemption-for-veolia-es-technical-solutions-llc>	75 FR 4759 <https://www.federalregister.gov/documents/2010/01/29/201943/polychlorinated-biphenyls-manufacturing-import-exemption-for-veolia-es-technical-solutions-llc>

10/9/2007	Procedural Rule	Transfer of Polychlorinated Biphenyl Cleanup and Disposal Program from the Office of Prevention, Pesticides and Toxic Substances (OPPTS) *(OPPTS renamed Office of Chemical Safety and Pollution Prevention, OCSPP, effective April 22, 2010)* to the Office of Solid Waste and Emergency Response (OSWER)	72 FR 57235 <https://www.federalregister.gov/documents/2007/10/09/e719841/transfer-of-polychlorinated-biphenyl-cleanup-and-disposal-program-from-the-office-of-prevention>
9/18/2007	**Final Rule**	Polychlorinated Biphenyls; Manufacturing (Import) Exemption	72 FR 53152 <https://www.federalregister.gov/documents/2007/09/18/e718345/polychlorinated-biphenyls-manufacturing-import-exemption>
5/25/2007	Notice of Application to Renew, Data Availability, and Modification of Existing Approval	Army Chemical Agent Rocket Incinerator Approval to Dispose of Polychlorinated Biphenyls under the Toxic Substances Control Act	72 FR 29317 <https://www.federalregister.gov/documents/2007/05/25/e710117/army-chemical-agent-rocket-incinerator-approval-to-dispose-of-polychlorinated-biphenyls-under-the>
4/30/2007	Proposed Rule	Polychlorinated Biphenyls; Manufacturing (Import) Exemption	72 FR 21190 <https://www.federalregister.gov/documents/2007/04/30/e78182/polychlorinated-biphenyls-manufacturing-import-exemption>
4/4/2006	Notice of Availability	Polychlorinated Biphenyl (PCB) Site Revitalization Guidance Under the Toxic Substances Control Act (TSCA)	71 FR 16703 <https://www.federalregister.gov/documents/2006/04/04/063206/polychlorinated-biphenyl-pcb-site-revitalization-guidance-under-the-toxic-substances-control-act>
6/30/2005	Notice of Public Meeting	Polychlorinated Biphenyls	70 FR 37837 <https://www.federalregister.gov/documents/2005/06/30/0512916/polychlorinated-biphenyls-notice-of-public-meeting>
9/7/2004	Availability of Supplemental Response to Comments Document	Storage of PCB Articles for Reuse	69 FR 54025 <https://www.federalregister.gov/documents/2004/09/07/0420222/storage-of-pcb-articles-for-reuse-availability-of-supplemental-response-to-comments-document>
6/20/2003	**Final Rule**	Polychlorinated Biphenyls (PCBs) - Use of Porous Surfaces, Amendment in Response to Court Decision	68 FR 36927 <https://www.federalregister.gov/documents/2003/06/20/0315668/polychlorinated-biphenyls-use-of-porous-surfaces-amendment-in-response-to-court-decision>

1/31/2003	**Final Rule**	Polychlorinated Biphenyls; Manufacturing (Import) Exemptions	68 FR 4934 <https://www.federalregister.gov/documents/2003/01/31/032344/polychlorinated-biphenyls-manufacturing-import-exemptions>
9/17/2002	Proposed Rule	Polychlorinated Biphenyls; Manufacturing (Import) Exemptions	67 FR 58567 <https://www.federalregister.gov/documents/2002/09/17/0223718/polychlorinated-biphenyls-manufacturing-import-exemptions>
4/2/2001	**Final Rule**	Reclassification of PCB and PCB-Contaminated Electrical Equipment	66 FR 17602 <https://www.federalregister.gov/documents/2001/04/02/018055/reclassification-of-pcb-and-pcb-contaminated-electric equipment>
3/30/2001	**Final Rule**	Polychlorinated Biphenyls (PCBs); Return of PCB Waste From U.S. Territories Outside the Customs Territory of the United States	66 FR 17468 <https://www.federalregister.gov/documents/2001/03/30/017920/polychlorinated-biphenyls-pcbs-return-of-pcb-waste-from-us-territories-outside-the-customs-territory>
11/1/2000	Proposed Rule	Polychlorinated Biphenyls (PCBs); Return of PCB Waste From US Territories Outside the Customs Territory of the United States	65 FR 65653 <https://www.federalregister.gov/documents/2000/11/01/0027971/polychlorinated-biphenyls-pcbs-return-of-pcb-waste-from-us-territories-outside-the-customs-territory>
4/6/2000	Proposed Rule	Use Authorization for and Distribution in Commerce of Non-Liquid Polychlorinated Biphenyls; Notice of Availability; Partial Reopening of the Comment Period; Extension of Comment Period	65 FR 18018 <https://www.federalregister.gov/documents/2000/04/06/008407/use-authorization-for-and-distribution-in-commerce-o non-liquid-polychlorinated-biphenyls-notice-of>
12/10/1999	Proposed Rule	Use Authorization for and Distribution in Commerce of Non-Liquid Polychlorinated Biphenyls; Notice of Availability; Partial Reopening of the Comment Period	64 FR 69358 <https://www.federalregister.gov/documents/1999/12/10/9932079/use-authorization-for-and-distribution-in-commerce-non--liquid-polychlorinated-biphenyls-notice>
6/24/1999	**Final Rule**	Technical and Procedural Amendments to TSCA Regulations - Disposal of Polychlorinated Biphenyls (PCBs)	64 FR 33755 <https://www.federalregister.gov/documents/1999/06/24/9916098/technical-and-procedural-amendments-to-tsca-regulationsdisposal-of-polychlorinated-biphenyls-pcbs>
6/29/1998	**Final Rule**	Disposal of Polychlorinated Biphenyls (PCBs)	63 FR 35384 <https://www.federalregister.gov/documents/1998/06/29/9817048/disposal-of-polychlorinated-biphenyls-pcbs>
3/18/1996	**Final Rule**	Disposal of Polychlorinated Biphenyls; Import for Disposal	61 FR 11095 <https://www.federalregister.gov/documents/1998/06/29/9817048/disposal-of-polychlorinated-biphenyls-pcbs>

2/9/1995	Notice of Informal Hearing	PCBs; Manufacturing, Processing and Distribution in Commerce Exemptions	60 FR 7742 <https://www.federalregister.gov/documents/1995/02/09/953297/polychlorinated-biphenyls-pcbs-manufacturing-processing-and-distribution-in-commerce-exemptions>
12/6/1994	Proposed Rule	Disposal of PCBs (Mega Amendments)	59 FR 62788 <https://www.federalregister.gov/documents/1995/03/10/955986/disposal-of-polychlorinated-biphenyls-pcbs-notice-of-informal-hearing>
12/6/1994		PCBs; Manufacturing, Processing and Distribution in Commerce; Proposed Decision on Exemption Petitions	59 FR 62875 <https://www.federalregister.gov/documents/1994/12/06/9429569/polychlorinated-biphenyls-manufacturing-processing-and-distribution-in-commerce-proposed-decisions>
4/11/1994	Exemptions from Prohibition	PCBs	59 FR 16991 <https://www.federalregister.gov/documents/1994/04/11/948465/polychlorinated-biphenyls-exemptions-from-prohibitio-against-manufacturing-processing-and>
11/18/1993	Proposed Rule	Reclassification of PCB and PCB-Contaminated Transformers	58 FR 60970
11/9/1993		Criteria for Granting Approval for Commercial Storage of PCBs for Disposal	58 FR 59372
6/8/1993		Use of Waste Oil	58 FR 32061
1/26/1993	Proposed Rule	Storage for Disposal of PCBs	58 FR 6184
4/16/1992		Revision of Test Methods Incorporated by Reference	57 FR 13322
3/2/1992	Proposed Rule	PCB Exemptions and Use Authorizations	57 FR 7349
9/10/1991		Receipt of Applications to Dispose of PCBs	56 FR 46180
6/10/1991		Receipt of Application to Operate PCB Storage Facility	56 FR 26673
6/10/1991	ANPR	Advanced Notice of Proposed Rulemaking for Disposal of PCBs	56 FR 26738
6/10/1991	Availability of Draft Guidance Documents	Availability of Draft Guidance on Disposal of PCBs	56 FR 26745

4/2/1991	Availability of Draft Guidance Documents	PCBs in Natural Gas Pipelines	56 FR 13473
3/4/1991		Availability and Review of PCB State Enhancement Grant Program	56 FR 9008
3/1/1991		Agency Information Collection Activities under OMB Review	56 FR 8759
2/13/1991		Agency Information Collection Activities under OMB Review; PCB Exemptions - Annual Submission Requirements	56 FR 5824
12/27/1990	Notice	Agency Information Collection Activities under OMB Review	55 FR 53187
11/26/1990	**Final Rule**	PCBs in Electrical Transformers	55 FR 49043
11/7/1990	**Final Rule**	Partial Rescission of Exemption Rule	55 FR 46790
11/7/1990	Proposed Rule	Disposal Approval	55 FR 46790
11/2/1990		Criteria and Procedures for Terminating Storage	55 FR 46470
10/31/1990	Corrections	PCBs in Electrical Transformers	55 FR 45804
9/24/1990		PCBs; Manufacturing, Processing, Distribution in Commerce Technical Amendment	55 FR 38998
9/13/1990	**Final Rule**	Stay of Interpretation	
8/31/1990		Receipt of application for Approval to Dispose of PCBs	55 FR 35720
6/27/1990	Correction	Notification and Manifesting for PCB Waste Activities	55 FR 26204
6/6/1990		Receipt of Application for Approval to Dispose of PCBs	55 FR 23134
5/22/1990	**Final Rule**	PCBs; Manufacturing, Processing, Distribution in Commerce Exemption	55 FR 21023
4/13/1990		Availability of PCB Penalty Policy	55 FR 13955
4/6/1990	Clarification	PCB; Wet Weight/Dry Weight	55 FR 12866

1/8/1990	Correction	Notification and Manifesting for PCB Waste Activities	55 FR 695
12/21/1989	**Final Rule**	Notification and Manifesting for PCB Waste Activities	54 FR 52716
9/12/1989	Reopening of Comment Period	PCB Exemptions	54 FR 37698
7/6/1989	Correction	PCB in Electrical Transformers	54 FR 28418
5/19/1989	**Final Rule**	Procedures for Rulemaking under Section 6 of TSCA	54 FR 21622
11/9/1988	Extension of Comment Period	Notification and Manifesting for PCB Waste Activities	53 FR 45288
10/28/1988		Receipt of application for Approval to Dispose of PCBs	53 FR 43767
10/19/1988	Amendment and Clarifications	PCB Spill Cleanup Policy	53 FR 40882
9/26/1988	Proposed Rule	Notification and Manifesting for PCB Waste Activities	53 FR 37436
9/1/1988	Correction	PCBs in Electrical Transformers	53 FR 33897
8/24/1988	Correction	PCBs; Manufacturing, Processing and Distribution in Commerce Exemptions	53 FR 32326
8/2/1988		PCB Exclusions, Exemptions and Use Authorizations; Correction	53 FR 29114
7/19/1988	**Final Rule**	PCBs in Electrical Transformers	53 FR 27322
7/1/1988	Correction	PCB and Chemical Fate Test Guidelines	53 FR 25049
6/27/1988	**Final Rule**	Exclusion, Exemptions and Use Authorizations	53 FR 24206
6/9/1988	**Final Rule**	PCB and Chemical Fate Testing Guidelines; Incorporation by Reference Update	53 FR 21641

5/25/1988		Receipt of Application for Approval to Dispose of PCBs	53 FR 18900
5/18/1988	Notice of Receipt of Application	Receipt of Application for Approval to Dispose of PCBs	53 FR 11761
4/5/1988	Proposed Revisions of Incorporation by Reference	PCB and Chemical Fate Testing Guidelines	53 FR 11104
3/31/1988		PCB and Chemical Fate Testing Guidelines, Reapproved Test Methods	53 FR 10390
9/18/1987	Corrections	PCBs in Electrical Transformers	52 FR 35350
9/4/1987	Corrections	PCBs; Exclusions, Exemptions and Use Authorizations	52 FR 33680
8/21/1987	Proposed Rule	PCBs in Electrical Transformers	52 FR 31738
7/8/1987	Proposed Rule	PCBs; Exclusions, Exemptions and Use Authorizations	52 FR 25838
7/2/1987	Denial of Citizens' Petition	PCBs	52 FR 25068
6/19/1987	Corrections	PCB Spill Cleanup Policy	52 FR 23397
4/2/1987	**Final Rule**	PCB Spill Cleanup Policy	52 FR 10688
1/9/1987	Response to Citizens' Petition	PCBs	52 FR 862
12/8/1986		Clarification of the Use of Electrical Transformers	59 FR 47241
8/8/1986	**Final Rule**	Response to Exemption Petitions	51 FR 28556
8/29/1985	Denial of Exemption Petition	Response to Exemptions Petitions; Proposed Rule and Response to Ward Transfer Co. Petition for Exemption	50 FR 35182
7/17/1985	**Final Rule**	PCBs in Electrical Transformers	50 FR 29170

4/4/1985	Proposed Incorporation by Reference Revision	PCBs	50 FR 13393
2/8/1985	Extension of Comment Period	PCBs; Use in Electrical Transformers	50 FR 5401
11/28/1984	Correction	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Prohibitions; Use in Electrical Transformers	49 FR 46770
11/8/1984		Modification of Definition of Totally Enclosed Manner for PCB Activities	49 FR 44634
10/11/1984	Proposed Rule	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Prohibitions; Use in Electrical Transformers	49 FR 39966
9/19/1984	Incorporation by Reference	PCBs	49 FR 36648
8/20/1984	Correction	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Prohibitions, Exclusions, Exemptions and Use Authorizations	49 FR 33019
7/23/1984	Proposed Rule	PCBs, Modification of Definition of Totally Enclosed Manner for PCB Activities	49 FR 29625
7/18/1984	Technical Amendment	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Prohibitions	49 FR 29066
7/18/1984	Editorial Amendment of Definition Correction	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Prohibitions	49 FR 29066
7/10/1984		PCBs; Final Rules and Notice of Request for Additional Comments on Certain Individuals and Class Petitions for Exemption	49 FR 28154
7/10/1984	Exclusions and Authorizations	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Prohibitions	49 FR 28172
7/10/1984		PCBs; Manufacturing, Processing, Distribution in Commerce and Use Prohibitions; Use in Microscopy and Research and Development	49 FR 28193

7/10/1984		PCBs; Request for Additional Comments on Certain Individual Class Petitions for Exemptions	49 FR 28203
6/20/1984	Editorial Amendment of Definition	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Prohibitions	49 FR 25239
6/1/1984	Proposed Incorporation by Reference Revision	PCBs	49 FR 22836
3/22/1984	ANPR	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Prohibitions; Use in Electrical Transformers	49 FR 11070
3/19/1984		PCBs; Withdrawal of Proposed Rule Prohibitions at Agricultural Chemical Facilities	49 FR 10133
1/13/1984	Denial of Citizens' Petition	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Prohibitions	49 FR 1697
12/8/1983	Proposed Rule	PCBs, Exclusions, Exemptions and Use Authorizations	48 FR 55076
11/23/1983	Correction	PCBs; Manufacturing, Processing, Distribution in Commerce Exemptions	48 FR 52953
11/17/1983		PCBs; Manufacturing, Processing, Distribution in Commerce and Use Prohibitions; Use in Microscopy and Research and Development	48 FR 52402
11/17/1983		TSCA Statement of Policy for Compliance and Enforcement of PCB Storage for Disposal Regulations	48 FR 52304
11/1/1983		PCBs; Manufacturing, Processing, Distribution in Commerce Exemptions	48 FR 50486
5/10/1983	Notice of Availability and Summary Report	Availability of Report; Monitoring Results and Environmental Impact on the Gulf of Mexico Incineration of PCBs under Research Permit H81-002; 4/83	48 FR 20984

4/20/1983	Denial of Citizens' Petition; Rule Related Notice	PCBs; Manufacturing Processing, Distribution in Commerce, and Use Prohibitions	48 FR 16884
4/7/1983		PCBs; Manufacturing, Processing, Distribution in Commerce and Use Prohibitions; Incorporation by Reference Revisions; Correction; Final Rule; Correction (corrects "batch testing" procedures of FR 2/8/83)	48 FR 15125
3/30/1983	Procedural Rule Amendment and Statement of Policy	PCBs; Procedural Amendment of the Approval Authority for PCB Disposal Facilities and Guidance for Obtaining Approval	48 FR 13181
2/18/1983	Statement of Policy	PCB Use in Electrical Equipment	48 FR 7172
2/8/1983	**Final Rule**	PCB Incorporation by Reference Revisions	48 FR 5729
2/1/1983	Correction	PCB Manufacture, Processing, Distribution and Use in Closed and Controlled Waste Manufacturing Processes	48 FR 4467
1/3/1983	**Final Rule**	Use Authorization for PCB Railroad Transformers	48 FR 124
12/28/1982	Correction	NIOSH/OSHA: Field Research Projects	47 FR 57774
12/28/1982	Correction	PCB Use in Electrical Equipment	47 FR 54436
12/28/1982		Pulp, Paper and Paperboards Point Source Category Effluent Limitations Guidelines and New Source Performance Standards; Proposed Regulation (Clean Water Act)	47 FR 52066
12/28/1982	Proposed Rule	Ocean Dumping; Proposed Designation of At-Sea Incineration Site	47 FR 51769
12/28/1982	**Final Rule**	PCB Manufacture, Processing, Distribution and Use in Closed and Controlled Waste Manufacturing Processes	47 FR 46980
12/28/1982	Denial of Citizens' Petition	PCB Regulation of MCBs and DCBs	47 FR 46723

12/28/1982	**Final Rule**	PCB Use in Electrical Equipment	47 FR 37342
12/28/1982	Denial of Citizens' Petition	PCB Regulations of MCBs	47 FR 37258
7/13/1982	Extension of Comment Period	PCB Incorporation by Reference Revisions	47 FR 30270
7/13/1982		Notice of Availability of Guidelines for the Analysis of PCBs	47 FR 30082
7/13/1982	Notice of Informal Hearing	PCBs; Manufacturing, Processing, Distribution in Commerce and Use in Closed and Controlled Waste Manufacturing Process	47 FR 30082
7/13/1982	Proposed Rule	PCBs; Manufacturing, Processing, Distribution in Commerce and Use in Closed and Controlled Waste Manufacturing Process	47 FR 24976
7/13/1982	**Final Rule**	PCB Incorporation by Reference Update	47 FR 22098
7/13/1982	Proposed Rule	PCB Incorporation by Reference Revisions	47 FR 22123
7/13/1982	**Final Rule**	PCB Recodification	47 FR 19526
7/13/1982	Proposed Rule	PCB Use in Electrical Equipment	47 FR 17426
7/13/1982	Denial of Citizens' Petition	PCB Disposal and Research and Development Activities	47 FR 2379
11/18/1981	Proposed Rule	Use Authorization for PCB Railroad Transformers	46 FR 56626
5/20/1981	Clarification of Interim Measures Program	PCB Use in Electrical Equipment	46 FR 27614
5/20/1981	Court Order	PCBs at Concentrations Below 50 ppm	46 FR 27615
5/20/1981	ANPR	PCBs at Concentrations Below 50 ppm; Possible Exclusion from Manufacturing Ban	46 FR 27617
5/20/1981	ANPR	PCBs at Concentrations Below 50 ppm	46 FR 27619

5/6/1981	Abeyance of Proposed Rule	Restrictions on Use of PCBs at Agricultural Pesticide and Fertilizer Facilities	46 FR 25418
3/10/1981	Court Order	PCB Use in Electrical Equipment	46 FR 16090
3/10/1981	ANPR	PCB Use in Electrical Equipment	46 FR 16095
12/23/1980	Extension of Comment Period	Restrictions on Use of PCBs at Agricultural Pesticide and Fertilizer Facilities	45 FR 84828
12/4/1980	Denial of Citizens' Petition	Use of PCBs in Floor Sweep Compounds	45 FR 80320
10/28/1980	Extension of Comment Period; Announcement of Informal Public Meeting	Restrictions on Use of PCBs at Agricultural Pesticide and Fertilizer Facilities	45 FR 71364
9/10/1980	Policy Guidelines	PCB Penalty Policy	45 FR 59790
7/14/1980	Extension of Comment Period	Restrictions on Use of PCBs at Agricultural Pesticide and Fertilizer Facilities	45 FR 47168
5/9/1980	Proposed Rule	Restrictions on Use of PCBs at Agricultural Pesticide and Fertilizer Facilities	45 FR 30989
5/1/1980		Expiration of the Open Border Policy for PCB Disposal	45 FR 29115
4/16/1980	Extension of Comment Period	Request for Information on PCB Transformers (published 3/5/80)	45 FR 25828
3/28/1980	Final Amendment	Disposal Requirements for PCB Capacitors in Chemical Waste Landfills	45 FR 20473
3/5/1980		Policy Statement on Future Exemption Petitions	45 FR 14247
3/5/1980		Request for Information on PCB Transformers ("Weeping" or "Sweating")	45 FR 14232

11/29/1979	Proposed Amendment Clarification	PCB Hydraulic Machines	44 FR 68489
11/21/1979	Proposed Amendment	Disposal Requirements for Large PCB Capacitors in Chemical Waste Landfills	44 FR 66851
10/2/1979	Proposed Rule and Interim Guidance	Notification of Export of PCBs;	44 FR 56856
9/19/1979		Disposal Requirements; Immediately Effective Amendment to the 5/31/79 Final Rule Comment Period	44 FR 54296
7/20/1979	Notice of Additional Petitions and Extensions of Reply Comment	PCBs; Manufacturing Exemptions	44 FR 42727
7/9/1979	Denial of Citizens' Petition	Disposal of PCB Contaminated Soil and Debris	44 FR 40132
5/31/1979	Proposed Rule	Amendment to Criteria for Chemical Waste Landfills	44 FR 31567
5/31/1979	Proposed Rule	Manufacturing Exemptions	44 FR 31564
5/31/1979		Interim Procedural Rules for Exemptions from the PCB Processing and Distribution in Commerce Bans PCBs;	44 FR 31558
5/31/1979	**Final Rule**	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Bans	44 FR 31514
3/12/1979	Citizens' Petition	Disposal of PCB Contaminated Soil and Debris	44 FR 13575
1/2/1979		Policy for Implementation and Enforcement of PCB Ban Rule	44 FR 108
11/1/1978		Interim Procedural Rules for Exemptions from PCB Manufacturing Ban	43 FR 50905

9/22/1978	Extension of Reply Comment Period	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Bans	43 FR 43048
8/25/1978	Clarification	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Bans	43 FR 38057
8/2/1978		PCB Addendum to Preamble and Correction to Final Rule published 2/17/78	43 FR 33918
6/7/1978	Proposed Rule	PCBs; Manufacturing, Processing, Distribution in Commerce and Use Bans	43 FR 24802
2/17/1978	**Final Rule**	PCBs; Marking and Disposal	43 FR 7150
12/2/1977	**Final Rule**	Procedures for Rulemaking under Section 6 of TSCA	42 FR 61259
6/27/1977	Solicitation of Comments	PCB Open Public Meeting;	42 FR 32555
5/24/1977	Proposed Rule	PCB Marking and Disposal	42 FR 26564
4/1/1976		PCB Containing Waste; Disposal Procedures	41 FR 14133

PCBs and Hazardous Waste

PCBs are not defined as hazardous wastes (Memo, Weddle to Verde; May 18, 1984 - RCRA Online Number 12235 <https://rcrapublic.epa.gov/files/12235.pdf>). However, it is possible that PCBs may be incidental contaminants in listed hazardous waste (e.g., solvent used to remove PCBs from transformers) or may be present in wastes that are characteristically hazardous. In these cases, wastes that otherwise meet a listing criteria or are characteristically hazardous are still subject to RCRA regulation regardless of PCB content.

However, to avoid duplicative regulation with Toxic Substances Control Act (TSCA), certain PCB containing wastes that exhibit the toxicity characteristic are exempt from regulation under RCRA (Monthly Call Center Report Question; September 1996 - RCRA Online Number 14014 <https://rcrapublic.epa.gov/files/14014.pdf>). Section 261.8 exempts from RCRA Subtitle C regulation PCB-containing dielectric fluid and the electric equipment which holds such fluid if they satisfy two criteria. First, these PCB wastes must be regulated under the TSCA standards of Part 761. Second, only the PCB wastes which exhibit the toxicity characteristic for an organic constituent (waste codes D018-43) may qualify for the exemption (§261.8).

States may also have a regulatory program which is more stringent or broader in scope than the Federal program. Many state have expanded their universe of regulated wastes to cover additional waste (e.g., PCBs) not defined as hazardous under the Federal program. Individuals should check with their state to see if they are subject to any state requirements.

Additional information regarding the regulation of PCBs under RCRA is available in the following guidance documents:

- Memo, Lowrance to Wassersug; September 22, 1989 - RCRA Online Number 11470 <https://rcrapublic.epa.gov/files/11470.pdf>
- Memo, Porter to McCloskey; April 26, 1986 - RCRA Online Number 11144 <https://rcrapublic.epa.gov/files/11144.pdf>

Polychlorinated Biphenyls (PCBs): Revisions to Manifesting Regulations

EPA updated and clarified several sections of the PCB regulations associated with the manifesting requirements. This was done to the greatest extent possible to match the manifesting requirements for PCBs under the Toxic Substances Control Act (TSCA) to those of Resource Conservation and Recovery Act (RCRA).

- Federal Register: Proposed Rule <http://www.regulations.gov/#!documentdetail;d=epa-hq-rcra-2011-0524-0003> - September 6, 2012

The docket for this rulemaking is EPA-HQ-RCRA-2011-0524 <http://www.regulations.gov/#!docketdetail;d=epa-hq-rcra-2011-0524> and can be accessed at Regulations.gov <http://www.regulations.gov>.

The comment period closed November 5, 2012. No adverse comments on the rule were received, so the direct final rule took effect December 5, 2012.

- Federal Register: Direct Final Rule <http://www.regulations.gov/#!documentdetail;d=epa-hq-rcra-2011-0524-0001> - September 6, 2012

Frequent Questions about Revisions to Manifesting Regulations

- **Why has EPA developed these changes?**

EPA issued this direct final rule to update and clarify several sections of the PCB regulations associated with manifesting requirements. This update streamlined regulations for the safe management of PCBs making it easier for industry to understand and follow PCB manifest regulations. Specifically, this update matches the manifesting requirements for PCBs under the TSCA to those of RCRA to the greatest extent possible.

- **What new regulations are involved in this change?**

The existing PCB manifest regulations are in 40 CFR part 761. The RCRA manifest regulations are in 40 CFR parts 262, 263, and 264. Since the promulgation of the PCB manifest regulations, several updates have been made to the RCRA manifest regulations where the corresponding changes have not been made to the PCB manifest regulations. The intent of these changes is to align the manifesting requirements for PCBs with the RCRA hazardous waste requirements. These changes are necessary because PCB wastes are manifested using the RCRA Uniform Hazardous Waste Manifest. PCB waste handlers and generators must also adhere to the more recent RCRA hazardous waste manifest regulations, while still accounting for certain unique PCB manifest regulations. Since PCBs are manifested using the same manifest as RCRA hazardous waste, all changes to part 761 are being implemented by PCB waste handlers and generators. This does not include the exemption to manifest waste transported on a right-of-way (40 CFR 262.20(f)).

- **What RCRA manifest regulatory requirements do not exist in the PCB manifest regulations?**

EPA compared the PCB manifest regulations (40 CFR part 761) to the RCRA manifest regulations (40 CFR parts 262, 263, and 264) to determine which sections from the RCRA manifest regulations do not exist in the PCB manifest regulations. Below is a table of the regulations from 40 CFR parts 262-264 EPA is adding to 40 CFR part 761 where the content of the section will be new to 40 CFR part 761. Like the other changes in this rule, explanations for the changes below are included in the subsequent sections in this direct final rule. In addition to this direct final rule, EPA will include in the docket a crosswalk between the RCRA manifest regulations and the PCB manifest regulations.

40 CFR Section	Brief Description of RCRA Regulation
262.20(c)	Designating an alternate facility on the manifest
262.20(f)	Manifesting exemption for the transport of waste on a public or private right-of-way within or along the border of contiguous property
262.23(f)	Generator requirements for rejected shipments returned by the receiving facility back to the generator. (Language on non-empty containers and residues is not relevant to PCB waste.)

40 CFR Section	Brief Description of RCRA Regulation
262.40(b)	Three-year exception report retention requirement for generators
263.21(a)(2)	Alternate designated facility is listed as one of the options that the transporter must deliver the waste to
263.21(b)(2)	Partial and full load rejection requirements if the waste is rejected while the transporter is on the facility's premises
264.71(a)(1)	Facility signs and dates the manifest when the waste was received, except as noted in the discrepancy space of the manifest, or when the waste was rejected as noted in the manifest discrepancy space
264.72(a)(2)	Definition of rejected wastes as manifest discrepancies
264.72(d)	Upon rejecting waste, the facility must consult with the generator prior to forwarding the waste to another facility. The facility must send the waste to another facility or back to the generator within 60 days of the rejection. While making arrangements for the rejected waste, the facility must ensure that the transporter retains custody or the facility provides secure, temporary custody of the waste.
264.72(e)	Facility requirements for preparing a new manifest for full or partial load rejections that are to be sent off-site to an alternate facility
264.72(f)	Facility requirements for preparing a new manifest for rejected wastes that must be sent back to the generator
264.72(g)	Facility requirements for amending the manifest for rejected wastes after the facility has signed, dated, and returned the manifest to the delivering transporter or to the generator
264.76(a)(6)	Report on un-manifested waste must include the certification signed by the owner, operator, or authorized representative of the facility

PCBs Home <https://epa.gov/pcbs>

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Policy and Guidance <https://epa.gov/pcbs/policy-and-guidance-polychlorinated-biphenyl-pcbs>

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Cleanup of PCB Waste <https://epa.gov/pcbs/managing-remediation-waste-polychlorinated-biphenyls-pcbs-cleanups>

Facility Approval Streamlining Toolbox (FAST) <https://epa.gov/pcbs/pcb-facility-approval-streamlining-toolbox-fast-streamlining-cleanup-approval-process>

Risk -based Disposal Approvals <https://epa.gov/pcbs/nationwide-risk-based-pcb-remediation-waste-disposal-approvals>

Disposal and Storage <https://epa.gov/pcbs/disposal-and-storage-polychlorinated-biphenyl-pcb-waste>

Commercial Storage and Disposal Facilities <https://epa.gov/pcbs/list-approved-polychlorinated-biphenyl-pcb-commercial-storage-and-disposal-facilities>

Multi-Regional Disposal Approvals <https://epa.gov/pcbs/multi-regional-polychlorinated-biphenyls-pcbs-disposal-approvals-0>

PCBs in Building Materials <https://epa.gov/pcbs/polychlorinated-biphenyls-pcbs-building-materials>

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